

DEPARTMENT OF TRANSPORTATION**Research and Special Programs
Administration****49 CFR Parts 173 and 179****[Docket No. HM-175]****Specifications for Tank Cars;
Response to Petitions**

AGENCY: Materials Transportation Bureau, Research and Special Programs Administration, Department of Transportation.

ACTION: Response to petitions for reconsideration of final rule.

SUMMARY: The Materials Transportation Bureau (MTB) received petitions for reconsideration of the final rule in Docket No. HM-175 from the Association of American Railroads (AAR), Dow Chemical Company, and Mallard Transportation Company. MTB and the Federal Railroad Administration (FRA) thoroughly reviewed the arguments raised in the petitions for reconsideration and conclude that the petitions should be denied.

FOR FURTHER INFORMATION CONTACT: Philip Olekszyk, Deputy Associate Administrator for Safety, Federal Railroad Administration, 400 Seventh Street SW, Washington, D.C. 20590 (202) 426-0897.

SUPPLEMENTARY INFORMATION: MTB received three petitions for reconsideration of the final rule issued in Docket HM-175 (49 FR 3468, Jan. 27,

1984). The petitioners are Dow Chemical Company (Dow), Mallard Transportation Company (Mallard), and the AAR.

The final rule in HM-175 made changes in the construction and maintenance standards for certain railroad tank cars used to transport hazardous materials. The changes are as follows:

(1) After December 31, 1986, DOT specification 105 tank cars built before September 1, 1981, that have a capacity exceeding 18,500 U.S. gallons and are carrying a flammable gas, anhydrous ammonia, or ethylene oxide must be equipped with lower half tank head protection (such as a head shield);

(2) After December 31, 1986, DOT specification 105 tank cars built before September 1, 1981, that have a capacity exceeding 18,500 U.S. gallons and are

carrying a flammable gas or ethylene oxide must be equipped with either: (a) high temperature thermal insulation (800 °F material) and safety relief valves sized according to the requirements for specification 112 and 114 tank cars, or (b) high temperature thermal insulation (550 °F material) and currently installed safety relief valves; and

(3) After December 31, 1986, DOT specification 111 tank cars that have a capacity exceeding 18,500 U.S. gallons and are carrying a flammable gas or ethylene oxide must be equipped with lower half head protection and either (a) high temperature thermal insulation (800 °F material) and safety relief valves sized according to the requirements for specification 112 and 114 tank cars, or (b) high temperature thermal insulation (500 °F material) and currently installed safety valves.

Since the main concerns of each petitioner varied from the other petitioners, each petition was separately considered.

Dow's Petition

Dow submitted a one-page petition for reconsideration stating that "the requirements and compliance schedule of subject rulemaking are unreasonable and premature." The basis for the "unreasonableness" of the final rule, according to Dow, is that an estimated 10 cars of its affected fleet of 883 cars would be out of service for retrofitting at any given time during the retrofit period. This five percent average reduction in its available fleet during the next several years is unreasonable in Dow's view.

MTB and FRA are not persuaded by Dow's argument on the reasonableness of the final rule. First, Dow did not submit data indicating the utilization rate of its affected fleet. Thus, there is no evidence that the five percent reduction in the available fleet would present any actual problem.

Second, based on national traffic statistics covering the entire tank car fleet transporting the materials covered by the final rule, there appears to be substantial traffic volume fluctuations on a month-to-month basis. MTB and FRA believe that Dow should be able to schedule retrofitting during the periods of low traffic so as to substantially reduce or eliminate any adverse impact. A more complete analysis of the impact of traffic volume fluctuations is included in an economic evaluation of the petitions for reconsideration, which is in the docket.

Third, even assuming a marginal reduction in Dow's available fleet during the retrofit period, there was no information included in the petition to

enable MTB and FRA to weigh the potential adverse impact to Dow as compared to added safety benefits of a prompt retrofit schedule.

Finally, even if more complete information from Dow indicated that the retrofit schedule presented a serious problem for Dow, as the owner of a major portion of the cars affected by the final rule, the proper way to proceed would be to address Dow's specific needs and not to revise the basic rule.

Dow's second contention is that the rule is premature. Dow argues that there are not any approved 550 °F thermal protection systems nor any off-the-shelf large capacity valves designed for ethylene oxide. MTB and FRA are not persuaded by this contention. As is often the case, a specific requirement creates the necessary market for product testing and development. Subsequent to Dow's petition, MTB published a revised list of excepted thermal protection systems (49 FR 33524, Aug. 23, 1984). The list included five thermal protection systems that meet the 550 °F standard. With respect to a large capacity valve for ethylene oxide, MTB and FRA are not aware of any bona fide request to a valve manufacturer for the construction of such a valve. If a timely order is made and a valve cannot be manufactured within the retrofit period, MTB and FRA will consider an extension of the deadline.

Accordingly, Dow's petition for reconsideration is denied.

Mallard's Petition

Mallard submitted a two-page petition. Mallard's basic contention is that the final rule is excessively costly for Mallard to comply with. However, the petition did not attempt to rebut FRA's extensive benefit/cost analysis included in the docket. Nor did Mallard argue that the rule as a whole is not beneficial. Rather, the petition alleges that the Mallard Transportation Company is a small business under the Regulatory Flexibility Act (RFA) and that it would be financially hurt by the rule. Mallard's petition states "we will spend monies that will never be recovered."

MTB is denying Mallard's petition for several reasons. First and foremost is that, whatever the ultimate merits of Mallard's contention of unreasonable economic harm, the alleged economic harm is peculiar to Mallard and, thus, is not a basis for revising the rule generally.

Moreover, neither MTB nor FRA believe Mallard has yet made a case of significant economic injury to it as a small business. First, Mallard is a

leasing company that owns approximately 220 tank cars, not an inconsequential asset base. While the petition does not provide enough economic information about Mallard Transportation Company to reach a final determination, it is not clear that Mallard would qualify as a small business under the RFA.

Second, the basic purpose of the RFA is to provide special treatment for small business in those cases where uniform treatment of all business, regardless of size, would actually produce disproportionate burdens on small businesses that may adversely affect competition in the marketplace, discourage innovation, or restrict improvements in productivity. This is not the case with the final rule in Docket HM-175 since the cost burdens imposed are not related to the size of the business. Rather, the cost burdens are purely marginal in nature because they are directly proportional to the number of relevant cars owned by a company. A more complete discussion of this issue is included in an economic evaluation of the petitions for reconsideration that is in the docket.

Finally, Mallard has not shown the degree of adverse economic impact to enable MTB and FRA to assess that impact against the safety benefits attributable to the retrofit. Thus, while it is true that Mallard may have to spend approximately \$150,000 to retrofit 10 cars, there is insufficient data to determine the potential hardship that the expenditure would cause. MTB and FRA can consider further Mallard's individual situation at such time as additional information is provided.

AAR's Petition

The AAR submitted a 44-page petition for reconsideration (including attachments). The petition addresses the single issue of safety valve sizing. In addition to the 44-page petition itself, the AAR's analysis involves references to numerous studies, computer programs, and technical reports involving hundreds of pages of highly technical material. The discussion in this notice of the AAR's petition, therefore, is summary in nature. A technical analysis prepared to FRA of the AAR's petition for reconsideration in Docket HM-175 is entered in the docket.

The disagreement between the AAR and the Department of Transportation (DOT) concerning safety valve sizing is longstanding. The AAR contested the valve sizing approach adopted in Docket HM-144 (42 FR 46306, Sept. 15, 1977) for DOT specifications 112 and 114 tank cars. AAR restated its objections in

Docket HM-174, (46 FR 8005, Jan. 26, 1981), which involves new construction of DOT specification 105 tank cars. As a result of the AAR's petition for reconsideration of the final rule in HM-174, MTB postponed the compliance date for installing the large capacity safety relief valve on the new construction of DOT specification 105 tank cars built to transport ethylene oxide from September 1, 1981, until March 1, 1984. During that period the AAR prepared a comprehensive study of safety valve sizing. At the same time, FRA was continuing its longstanding research effort on the safety valve sizing issue.

The contentions raised by AAR in its study submitted to the docket in HM-174 have been previously addressed by MTB and FRA. A summary of the MTB and FRA position is included in the preamble discussion to the amendment of the final rule in HM-174 published on January 27, 1984 (49 FR 3473) and a detailed response is included in the docket. The amendment of the final rule was made in response to the AAR's petition for reconsideration in Docket HM-174.

The petition for reconsideration in Docket HM-175 is essentially a request to address once again the AAR's contentions addressed in the HM-174 decisionmaking. (The AAR's petition for reconsideration of the final rule in HM-175 also requested another reconsideration of the actions taken in HM-174. The procedural validity of the request need not be addressed since resolution of the technical issues as it affects Docket HM-175 effectively disposes of the identical technical issues in Docket HM-174.) Indeed, the AAR's petition does not raise new arguments about the safety valve sizing issue, but it does contain additional data and analysis in support of the arguments raised in its earlier study.

MTB and FRA thoroughly reviewed the AAR's petition for reconsideration in HM-175 and conclude that it does not contain data or analysis that could cause a change in the conclusions reached in responding to the AAR's petition for reconsideration of the final rule in HM-174. The longstanding disagreement reflects the technical complexity involved in the question of safety valve sizing. It also reflects the reality that totally clear cut answers to the many subcomponents of the analytical framework do not exist. Extrapolation from limited data, mathematical simplification of complex physical phenomena, use of data based

on experiments involving an entirely different scale (laboratory testing as opposed to full-scale testing), and other analytical difficulties characterize the process of determining the appropriate valve size.

While the AAR and FRA have "nits" to pick about each other's computer program and analytical approach, the critical differences reflect differing judgments about how to deal with uncertainty in the data and about what constitutes the proper level of safety. The fundamental difference between FRA and the AAR continues to be the fire environment that tank cars should be expected to withstand. The AAR petition proposes that tank cars only be required to withstand what the AAR denotes as "uncontrolled fires," whereas FRA believes that they should withstand more severe fires, what the AAR denotes as "catastrophic fires." Similarly, FRA and the AAR differ on whether there is a potential for total tank fire engulfment (FRA) or only a one quarter portion of the tank engulfed (AAR).

Obviously, FRA and the AAR continue to have an honest disagreement, reflecting both a differing assessment of research and technical literature in the field, and a different determination of the appropriate margin of safety. One thing is clear. As recently as ten years ago, before the adoption of the safety criteria in issue (800°F high temperature thermal insulation and a large capacity safety relief valve, or 550°F insulation), it was not uncommon for railroad tank cars transporting flammable gases to rupture violently as a result of being exposed to fire. The consequences of a thermally induced rupture of such a car can be catastrophic in terms of loss of life and property damage. Since adoption of the safety criteria, beginning in Docket HM-144 and now including Docket HM-174 and Docket HM-175, that accident experience has been virtually eliminated. While the accident reduction might have occurred without requiring a large capacity safety relief valve in addition to high temperature thermal insulation (800 °F material), it is far from certain that the reduction would have occurred.

Since it is our view that the proposal of the AAR petition to amend the final rule to size safety valves in accordance with the AAR's study pose unnecessary and unacceptable safety risks, the petition is denied.

Issued in Washington, D.C. on October 29, 1984.

L.D. Santman,

Director, Materials Transportation Bureau.

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